

World Economic and Financial Surveys

Global Financial Stability Report

Market Developments and Issues

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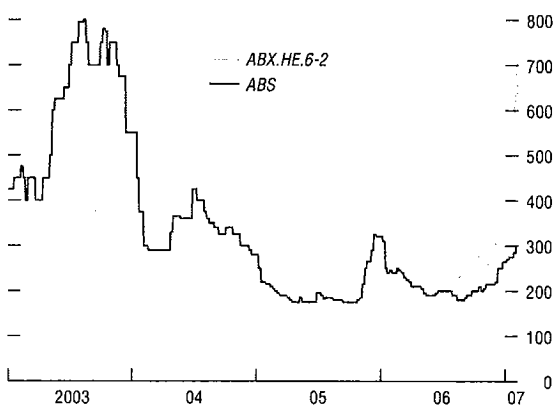


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I N T E R N A T I O N A L M O N E T A R Y F U N D

CHAPTER I ASSESSING GLOBAL FINANCIAL RISKS

Figure 1.6. Synthetic (ABX) and Cash (ABS) BBB-Subprime Spreads
(In basis points)



Sources: JPMorgan Chase & Co.; and Markit.

proliferation of so-called affordability products, which were intended to minimize borrowers' initial monthly payments, has exposed borrowers to payment shock, or substantial increases in monthly payments, as adjustable rate mortgages (ARMs) reset to a higher rate, low introductory rates expire, or mortgages start to amortize.⁹ Subprime mortgages are especially exposed to such payment shocks, since a disproportionate share originated as ARMs.¹⁰ Once faced with payment shock, borrowers with limited built-up equity may be unable to avoid default by extracting that equity to meet monthly payments. Similarly, they may be unable to pay off a mortgage by selling their home, particularly in an environment of weak home price appreciation. Either way, this is likely to boost the overall rate of default on subprime mortgages.

At the same time, recent U.S. regulatory guidance that tightened underwriting standards on nontraditional mortgages could exacerbate risk in the short term by reducing the refinancing options for subprime borrowers just as their mortgages are resetting to a higher rate, though some market participants believe underwriters were already tightening standards anyway. The regulatory changes may ultimately strengthen underwriting standards in the longer term, but they have no impact on previously originated mortgages.

The deterioration in the credit quality of subprime mortgages has, in turn, translated into wider spreads on securities collateralized by them. Spreads on BBB- asset-backed home equity loan (HEL) securities, which are collateralized by subprime mortgages, have widened 175 basis points since August. Credit default

⁹Conventional ARMs, which are fully amortizing from the beginning of their term, are subject to payment shock as underlying interest rates rise. A "teaser rate," or a low interest rate, is often offered to attract borrowers to ARMs, but it then rises at each rate adjustment period. Interest-only and option ARMs also embed such payment shocks in their structure at the time they become amortizing. Market participants estimate that around \$1.1 trillion to \$1.5 trillion of such loans will be reset this year.

¹⁰Roughly 85 percent of subprime loans are ARMs, whereas only 55 to 60 percent of prime and Alt-A loans are ARMs, and less than 20 percent of agency loans.

DETERIORATION IN THE U.S. SUBPRIME MORTGAGE MARKET—WHAT ARE THE SPILLOVER RISKS?

Table 1.1. Stress Test: Impact of Home Price Appreciation (HPA) on Asset-Backed Securities (ABS) Collateralized by Subprime Mortgage Loans
(Percent impairment of ABS tranches)

Tranche	Home Price Appreciation Scenarios (Average 5-year HPA in percent per year)								Memo Item: Percent of subprime deals in 2006 ¹
	-12	-8	-4	0	4	8	12	16	
AAA	0	0	0	0	0	0	0	0	75.0
AA	0	0	0	0	0	0	0	0	10.1
A	79	48	0	0	0	0	0	0	4.5
BBB	100	100	96	32	0	0	0	0	2.9
BB	100	100	100	100	25	0	0	0	0.7

Source: Lehman Brothers.

¹Not rated or not available amounts to 6.7 percent.

swaps (CDS) on these securities, where—in contrast to the cash market—investors can take an outright short position to express a negative view on subprime credit, have widened by even more, particularly on those backed by more recent mortgages. Spreads on BBB-rated indices of ABX (indices of CDS on subprime securities) have widened sharply since November (Figure 1.6 and Box 1.1).

This weakness has been contained to certain portions of the subprime market (and, to a lesser extent, the Alt-A market), and is not likely to pose a serious systemic threat. Stress tests conducted by investment banks show that, even under scenarios of nationwide house price declines that are historically unprecedented, most investors with exposure to subprime mortgages through securitized structures will not face losses. These stress tests simulate how slowing house price appreciation would produce losses for asset-backed securities (ABS) collateralized by subprime mortgages. The stress test illustrated in Table 1.1 shows that tranches rated A and higher would not face losses unless house prices fell 4 percent per year for five years.¹¹

¹¹The illustrated stress test is by Lehman Brothers and it used loan-level data for subprime mortgage loans that were originated during 1999–2005. These data were used to estimate losses for subprime collateral under different house price scenarios. Those losses were then applied to representative ABS deals using private deal modeling software in order to determine the extent of losses for each tranche of the securities. Stress tests by Bear Stearns and JPMorgan give qualitatively similar results.

This is because the lower-rated tranches absorb the risk of default first. Since, typically, nearly 90 percent of subprime ABS deals are rated A or higher, this suggests the amount of potential credit loss in subprime mortgages may be fairly limited. In fact, even the relatively risky BBB tranches only begin to face losses once housing prices fall by 4 percent per year.¹²

Potential Spillovers to Credit Markets and Market Participants

Notwithstanding that the impact of a cooling housing market has been primarily confined to subprime mortgages and securities issued on them, the growth in the subprime segment of the mortgage market and its increased linkages to various types of securities mean that shocks could create some of the following dislocations in broader asset markets:

- *Looser credit standards may extend beyond the subprime sector.* There is a risk that other higher-quality mortgage collateral may be subject to the same underwriting weaknesses observed in the subprime sector. For instance, more recent vintages of Alt-A mortgages show higher leverage ratios, lower credit scores, lower levels of documentation, more lax requirements for insurance, and other riskier characteristics

¹²The latest data from the Office of Federal Housing Enterprise Oversight show housing price appreciation for the fourth quarter of 2006 running at 5.9 percent year-on-year.

CHAPTER I ASSESSING GLOBAL FINANCIAL RISKS

Box 1.1. The Alphabet Soup of Subprime Mortgage Securitization—ABS, ABX, and CDOs

This box discusses the securitization process and carving up of mortgage cash flows into different types of securities. Over one-half of all U.S. subprime mortgage loans, prime second lien home equity loans, and home equity lines of credit are used as collateral for the issuance of asset-backed securities. Various types of credit enhancement are used to protect the securities issued from shortfalls in cash flows from the underlying collateral (see figure). Credit enhancement is achieved in several ways:

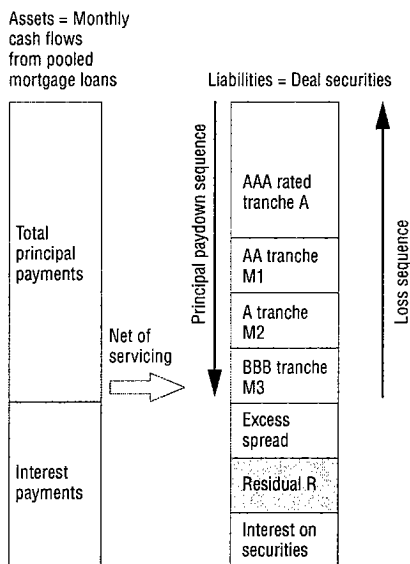
- **Subordination.** Securities are grouped in tranches with losses from defaults or foreclosures on the underlying mortgages applied to junior tranches before they are applied to more senior tranches.
- **Excess servicing.** A preset amount of interest is explicitly set aside from the servicing of the collateral each month to be used to make up any shortfalls in cash flows for senior tranches.
- **Residual tranching.** Additional cash flows above and beyond excess servicing are set aside to cover losses as needed.
- **Over-collateralization.** More collateral than the total par value of all the tranche securities may be pledged, generally in order to obtain a better credit rating.
- **Monoline insurance.** Third-party insurance or other financial guarantees may be provided to protect investors from losses.¹

With these various credit enhancements, the most senior tranches are relatively secure against credit risk, even on subprime mortgage collateral. Accordingly, they are rated AAA and offer lower yields than other tranches in a deal.

There is also a growing market for credit default swaps on ABS (ABCDS), a market that has broadened ABS trading from a long-only, buy-and-hold activity by facilitating the execution of both long and short positions. ABCDS contracts are more complex than conventional

Note: The main authors of this box are John Kiff and Mustafa Saiyid.

¹Such "pool" insurance is in addition to any mortgage insurance required by law for homeowners.

Creation of Asset-Backed Securities from Mortgage Loans: Subprime and Prime Seconds

Sources: Fabozzi (2002); Western Asset Management; and IMF staff estimates.

corporate-backed CDS, as they must account for various "soft" credit events that are specific to ABS, such as temporary interest and principal shortfalls.

ABX indices, which are indices on ABCDS, started trading in January 2006. These allow market participants to more efficiently trade credit exposure to ABS portfolios. The ABX indices are based on the largest and most liquid ABS issues, and a new series is launched every six months that reflects the most recent loan originations. Each series is subdivided into five subindices based on the credit ratings of the tranches of the 20 ABS that comprise the series: AAA, AA, A, BBB, and BBB-. Contracts based on these indices are cash settled.

The BBB- indices may be useful indicators of U.S. household sector financial stress, although they may not be entirely representative of the market. Spreads on the BBB- subindices of the